CASE STUDY

University of Freiburg Selects Tintri VMstore™ for Virtualized Infrastructure

VMstore

The University of Freiburg is a comprehensive university founded in 1457. It is among the oldest and most renowned universities in Germany and offers undergraduate and postgraduate studies in many disciplines, including humanities, natural and engineering sciences, medicine, and law. More than 24,000 students from over 100 nations are enrolled in degree programs over eleven faculties and more than 7,000 professors and lecturers, amongst many other employees, are involved in teaching and running the university. To support its efforts to keep teaching standards high, the university has invested a lot in its IT infrastructure over the years. Today a centralized data center supports all faculties and students with IT services like email, user administration, computer pools, and applications within their virtual infrastructure.

Challenges

- Poor performance could not support virtualized environment
- Management complexities

Solution

- Tintri VMstore T880
- Tintri Global Center

Results

- Better visibility into servers, network, and storage to diagnose performance bottlenecks
- Eliminated slow performance and downtime
- Ability to replicate VMs easily using Tintri Global Center

The Challenges: Poor Performance and Management Complexity for Virtualized Environment

In the past, many faculties at the university built up their own smaller data centers, tailored to their needs, leading to many pieces of infrastructure running in parallel in different departments and large administrative overheads. To make its IT more efficient, the university had already started to centralize all infrastructures into their central data center where possible. The university's storage manager, Martin Ullrich, explains, "The effort to centralize the entire IT infrastructure has been ongoing for years, and is favored by the university's administration as it has the potential to save a lot of our IT budget."

As with all public institutions, IT budgets are very limited, and for years the data center had to rely on older storage systems to underpin its infrastructure. Several SAN-based disk systems, one old NetApp Filer and some older Linux and Solaris systems, running on traditional hardware, supported all systems, including the virtualized part of the infrastructure running under VMware. The university's main data center already has a very high virtualization rate of about 90%, which totals to around 400 VMs. Essentially, most services, including databases and web servers, are virtualized.

The previous storage setup was not performing very well due to the older storage hardware. Users running vital VMs regularly complained about slow performance that prevented them from working efficiently. The systems were also not very reliable, resulting in regular downtime. Specifically, the older Linux and Solaris systems needed a lot of time and experience to manage them. Ullrich explains: "It was clear that the existing setup did not work any more. We needed a modern storage solution that was supported by a third party and once we got the budget approved, we immediately started the official, mandatory process of gathering proposals from vendors."

The Solution: Tintri VMstore and Tintri Global Center

The process of bidding for a new storage system in Germany is highly regulated and complicated. This had been planned by Ullrich well in advance and was a major part of the university's storage manager role. A big part of the process was to clearly define the criteria of what the new storage system should fulfill, and to conduct extensive market research to shortlist vendors that matched the criteria. Next to doing his own market research, Ullrich relied on independent research reports, particularly Gartner's Magic Quadrant, and references from similar organizations and universities to choose the correct vendor for the job.

The IT team had already defined technical specifications. LUN-based storage seemed an outdated technology. The previous storage solution, underpinning VMware, had been a disk-based SAN connected with fiber channel. It was clear to the university that this complex and expensive setup was unnecessary, as VMware had already made it possible to create data stores on NFS. Ullrich explains their plans to go with NFS: "Why should we pay for an expensive SAN infrastructure or licenses for fiber channel switches if we can connect everything simply,

Tintri
Intelligent Infrastructure

through NFS, which we could enable with our existing 10GB network on the back-end? The decision to go with NFS narrowed the field of suitable vendors, as even most of the newer developments rely solely on SAN protocols and do not offer NFS connectivity. This is where VMstore clearly stood out from the rest."

As a result, Tintri was invited to present VMstore to the university's IT team. After a successful presentation, Tintri introduced their local partner Concat AG in Bensheim to continue the bidding process.

"The university's call for proposals defined the desired new storage system's characteristics very clearly and actually did not rule out any approach," said Michael Gosch, Director Sales Science & Higher Education at Concat AG. "However, one major criteria for the new setup was that it should perform at a high level at all times. This requirement ruled out most monolithic storage approaches from the start, as those systems have proven they cannot support heterogeneous workloads at peak times."

To no surprise, even vendors of monolithic storage systems did not offer single devices, but suggested independent systems for the different workloads. Ullrich noted, "The original plan was to have two systems, one for file storage and one for virtualization. But because of the complex nature of the bidding process, we decided not to rule out single, monolithic systems. Eventually the incoming bids confirmed our assessment."

Six suppliers with solutions that fit the technical requirements made it to the final round, five of which submitted bids. Taking all their criteria into account, the University of Freiburg selected Concat to deploy a completely new storage system that included VMstore hybrid flash as the primary storage to support most of the virtualized workloads including the central web content management and e-learning systems.

"Tintri's partner Concat AG had already deployed many VMstore systems and is a certified partner, which was important for us," said Ullrich. "Once the entire bidding process ended, we decided to go with Concat AG's bid, that included VMstore for virtualization, bundled with EMC Isilon for simple file storage."

The Results: Straightforward Deployment, High-Performing Storage

The entire installation is split up between the main data center and the university's backup data center. The Isilon part consists of two clusters with a total capacity of close to 1PB of storage. As planned, all virtualized workloads are now running on two VMstore T880 hybrid flash systems, administered with Tintri Global Center. To be able to replicate between the two sites, VMstore ReplicateVM is utilized and VMstore SyncVM is used to restore VMs easily.

The installation process was straightforward and completed in one afternoon; in fact, it only took a few hours from unpacking to deploying the first VM. After deployment, the virtual workloads were routed to VMstore without disruption. Since then, the system has fully delivered on its promise to offer high-performing storage for the university's virtual environment, with very easy management.

The difference between standard infrastructure and Intelligent Infrastructure became evident quickly. Ullrich summed it up: "The system just delivers. Since moving on to VMstore, complaints about performance are a thing of the past. Even performance-hungry applications are now running without complaints. And whenever we had a question, the excellent Tintri support was there for us."

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Experience Different! For more information on how Tintri VMstore can turbo-charge your business success through a simple, Intelligent Infrastructure, visit tintri.com/vmstore.